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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/707,355 | 12/08/2003 | TING-WEI CHUANG | 9612-US-PA | 1354 |
| 31561 | 7590 | 09/12/2006 | EXAMINER | |
| JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE 7 FLOOR-1, NO. 100 ROOSEVELT ROAD, SECTION 2 TAIPEI, 100 TAIWAN | | | YAM, STEPHEN K | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2878 | |

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/707,355 | | CHUANG ET AL. | |
| | Examiner | | Art Unit | |
| | Stephen Yam | | 2878 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 14-20, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 17, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada US 6,774,578 in view of Lee et al. US 6,720,942.

Regarding Claims 1 and 13, Tanada teaches (see Fig. 1, 7B, 8) an organic electroluminescent device (see Col. 1, lines 7-13) and method of making, comprising a transparent substrate (5000) (see Col. 15, lines 40-45), a plurality of pixels for display (107 / 5048-5050) (see Fig. 1) disposed on the transparent substrate (see Fig. 7B, 8), wherein the pixels for display comprise a plurality of color pixels (see Col. 3, lines 55-57), and a detector (106 / 5044-5046) disposed adjacent to each pixel on the transparent substrate (see Fig. 1, 7B, 8). Tanada does not teach the color pixels as red-light pixels, green-light pixels, and blue-light pixels having a red-light detector, green-light detector, and blue-light detector, respectively. Lee et al.

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teach (see Fig. 2) a similar device with pixels (102) as red-light pixels, green-light pixels and blue-light pixels ("three-color pixel"- see Col. 4, lines 25-27) with the red-light pixels, green-light pixels, and blue-light pixels having a red-light detector, green-light detector, and blue-light detector, respectively ("photo-sensor may be coupled to a single color element of a three-color pixel"- see Col. 4, lines 25-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the color pixels as red-light, blue-light, and green-light pixels and the detectors as red-light, blue-light, and green-light detectors, as taught by Lee et al., in the device of Tanada, to provide color distinction for a color display and provide full color calibration, as taught by Lee et al. (see Col. 4, lines 22-25).

Regarding Claim 2, Tanada teaches (see Fig. 8) each pixel for display comprises, in sequence, a transparent anode (5048) (see Col. 22, lines 3-5), an organic electroluminescent layer (5049) (see Col. 1, lines 42-45 and Col. 22, lines 10-11), and a metal cathode (5050) (see Col. 22, lines 11-17).

Regarding Claim 3, Tanada teaches the transparent anode comprises indium-tin oxide or indium-zinc oxide (see Col. 22, lines 3-9).

Regarding Claim 4, Tanada teaches the organic electroluminescent layer is made of small molecular organic electroluminescent material or polymer electroluminescent material (see Col. 22, lines 25-30).

Regarding Claim 5, Tanada teaches the metal cathode comprises aluminum, aluminum/lithium fluoride, calcium, magnesium/silver alloy or silver (see Col. 22, lines 9-11).

Regarding Claim 11, Tanada teaches (see Fig. 4A) a driving unit coupled to each of the pixels, and each of the red-light detector, the green-light detector and the blue-light detector coupled to transfer units (401-404).

Regarding Claim 12, Tanada teaches the driving unit and the transfer units are coupled to a control unit (105) (see Fig. 1).

4. Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok et al. US 7,064,733 in view of Lee et al.

Regarding Claim 1, Cok et al. teach (see Fig. 1 and 3) an organic electroluminescent device (see Col. 4, lines 23-25), comprising a transparent substrate (40) (see Col. 3, lines 65-67), a plurality of pixels for display (42, 44, 46) disposed on the transparent substrate (see Fig. 3), wherein the pixels for display comprise a plurality of color pixels (see Col. 5, lines 46-59), and a detector (48,50,52) disposed adjacent to each pixel on the transparent substrate (see Fig. 3). Cok et al. does not teach the color pixels as red-light pixels, green-light pixels, and blue-light pixels having a red-light detector, green-light detector, and blue-light detector, respectively. Lee et al. teach (see Fig. 2) a similar device with pixels (102) as red-light pixels, green-light pixels and blue-light pixels ("three-color pixel"- see Col. 4, lines 25-27) with the red-light pixels, green-light pixels, and blue-light pixels having a red-light detector, green-light detector, and blue-light detector, respectively ("photo-sensor may be coupled to a single color element of a three-color pixel"- see Col. 4, lines 25-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the color pixels as red-light, blue-light, and green-light pixels and the detectors as red-light, blue-light, and green-light detectors, as taught by Lee

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et al., in the device of Cok et al., to provide color distinction for a color display and provide full color calibration, as taught by Lee et al. (see Col. 4, lines 22-25).

Regarding Claim 6, Cok et al. in view of Lee et al. teach the device in Claim 1, according to the appropriate paragraph above. Cok et al. also teach each detector comprising, in sequence, a first electrode (48), an electroluminescent layer (see Col. 4, lines 30-34), and a second electrode, and that the electrodes do not have to be transparent if light does not need to pass through, in the Fig. 3 embodiment (see Col. 3, line 67 to Col. 4, line 2). Cok et al. do not teach the electrodes as metal or as an anode and a cathode. It is well known in the art to construct non-transparent electrodes using metals such as Al, MgAg, etc. and that a photo-sensor such as a photodiode contains an anode and electrode to conduct an electrical output signal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the electrodes as metal and as an anode and a cathode in the device of Cok et al., to utilize a standard photodiode configuration for a detector signal output, and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding Claim 7, Cok et al. teach the metal anode as a non-transparent metal layer (since it does not require light to pass through in the Fig. 3 embodiment- see Col. 3, line 67 to Col. 4, line 2).

Regarding Claim 8, Cok et al. teach the electroluminescent layer comprising an organic material (see Col. 4, lines 30-34).

Regarding Claims 9, 21, and 22, Cok et al. in view of Lee et al. teach the device in Claim 6, according to the appropriate paragraph above. Cok et al. do not teach the metal anode having

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the same or different material of the metal cathode or the electroluminescent layer comprising an inorganic material. It is well known in the art to select appropriate materials for a component and utilize similar materials when possible for easier manufacturing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the metal anode having the same material of the metal cathode and the electroluminescent layer comprising an inorganic material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada in view of Cok et al.

Regarding Claim 10, Tanada teaches the device in Claim 1, according to the appropriate paragraph above. Tanada does not teach a light guider coupled to each of the pixels transmitting the light within the device to the corresponding detector. Cok et al. teach (see Fig. 1, 3, 5, 6) a similar device with a light guider (40) coupled to each of the pixels transmitting the light within the device to the corresponding detector (see Fig. 5 and 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a light guider coupled to each of the pixels transmitting the light within the device to the corresponding detector, as taught by Cok et al., in the device of Tanada, to increase the light coupling between the light emitter and detector for improved sensitivity and accurate light intensity determination.

Allowable Subject Matter

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6. Claims 14-20 and 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 14, the invention as claimed, specifically in combination with the step of forming the pixels, the red-light detector, the green-light detector and the blue-light detector comprises: forming a patterned transparent anode and a patterned metal anode on the transparent substrate, forming an organic electroluminescent layer on the transparent anode and an electroluminescent layer on the metal anode respectively, and forming a metal cathode on the organic electroluminescent layer and the electroluminescent layer respectively, is not disclosed or made obvious by the prior art of record.

Response to Arguments

8. Applicant's arguments with respect to claims 1-13, 21, and 22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cok et al. US 6,320,325 and Hack et al. US 7,053,412 teach similar devices with detector adjacent a pixel.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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